CLAIMS

What is Claimed:

1. An isolated polynucleotide comprising a sequence selected from the group consisting of:

(a) sequences provided in SEQ ID NOs:1-121, 123-197, 205-630, 632-684, 686, 690-691, 694-1058, 1069, 1071-1076, 1082, 1084, 1086, 1092, 1094, 1096-1101, 1103-1106, 1111-1114, 1119, 1120, and 1125;

(b) complements of the sequences provided in SEQ ID NOs:1-121, 123-197, 205-630, 632-684, 686, 690-691, 694-1058, 1069, 1071-1076, 1082, 1084, 1086, 1092, 1094, 1096-1101, 1103-1106, 1111-1114, 1119, 1120, and 1125;

(c) sequences consisting of at least 20 contiguous residues of a sequence provided in SEQ ID NOs:1-121, 123-197, 205-630, 632-684, 686, 690-691, 694-1058, 1069, 1071-1076, 1082, 1084, 1086, 1092, 1094, 1096-1101, 1103-1106, 1111-1114, 1119, 1120, and 1125;

(d) sequences that hybridize to a sequence provided in SEQ ID NOs:1-121, 123-197, 205-630, 632-684, 686, 690-691, 694-1058, 1069, 1071-1076, 1082, 1084, 1086, 1092, 1094, 1096-1101, 1103-1106, 1111-1114, 1119, 1120, and 1125, under moderately stringent conditions;

(e) sequences having at least 75% identity to a sequence of SEQ ID NOs:1-121, 123-197, 205-630, 632-684, 686, 690-691, 694-1058, 1069, 1071-1076, 1082, 1084, 1086, 1092, 1094, 1096-1101, 1103-1106, 1111-1114, 1119, 1120, and 1125;

(f) sequences having at least 90% identity to a sequence of SEQ ID NOs:1-121, 123-197, 205-630, 632-684, 686, 690-691, 694-1058, 1069, 1071-1076, 1082, 1084, 1086, 1092, 1094, 1096-1101, 1103-1106, 1111-1114, 1119, 1120, and 1125; and

(g) degenerate variants of a sequence provided in SEQ ID NOs:1-121, 123-197, 205-630, 632-684, 686, 690-691, 694-1058, 1069, 1071-1076, 1082, 1084, 1086, 1092, 1094, 1096-1101, 1103-1106, 1111-1114, 1119, 1120, and 1125.

2. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:

(a) sequences encoded by a polynucleotide of claim 1;

(b) sequences having at least 70% identity to a sequence encoded by a polynucleotide of claim 1;

(c) sequences having at least 90% identity to a sequence encoded by a polynucleotide of claim 1;

(d) sequences set forth in SEQ ID NOs:122, 198-204, 631, 685, 687, 692, 693, 1059-1068, 1070, 1077-1081, 1083, 1085, 1087, 1093, 1095, 1102, 1107-1110, 1115-1118, 1121, 1122, and 1126-1129;

(e) sequences having at least 70% identity to a sequence set forth in SEQ ID NOs:122, 198-204, 631, 685, 687, 692, 693, 1059-1068, 1070, 1077-1081, 1083, 1085, 1087, 1093, 1095, 1102, 1107-1110, 1115-1118, 1121, 1122, and 1126-1129; and

(f) sequences having at least 90% identity to a sequence set forth in SEQ ID NOs:122, 198-204, 631, 685, 687, 692, 693, 1059-1068, 1070, 1077-1081, 1083, 1085, 1087, 1093, 1095, 1102, 1107-1110, 1115-1118, 1121, 1122, and 1126-1129.

3. An expression vector comprising a polynucleotide of claim 1 operably linked to an expression control sequence.

4. A host cell transformed or transfected with an expression vector according to claim 3.

5. An isolated antibody, or antigen-binding fragment thereof, that specifically binds to a polypeptide of claim 2.

6. A method for detecting the presence of a cancer in a patient, comprising the steps of:

(a) obtaining a biological sample from the patient;

(b) contacting the biological sample with a binding agent that binds to a polypeptide of claim 2;

(c) detecting in the sample an amount of polypeptide that binds to the binding agent; and

(d) comparing the amount of polypeptide to a predetermined cut-off value and therefrom determining the presence of a cancer in the patient.

7. A fusion protein comprising at least one polypeptide according to claim 2.

8. An oligonucleotide that hybridizes to a sequence recited in SEQ ID NOs:1-121, 123-197, 205-630, 632-684, 686, 690-691, 694-1058, 1069, 1071-1076, 1082, 1084, 1086, 1092, 1094, 1096-1101, 1103-1106, 1111-1114, 1119, 1120, and 1125, under moderately stringent conditions.

9. A method for stimulating and/or expanding T cells specific for a tumor protein, comprising contacting T cells with at least one component selected from the group consisting of:

(a) polypeptides according to claim 2;

(b) polynucleotides according to claim 1; and

(c) antigen-presenting cells that express a polynucleotide according to claim 1,

under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

10. An isolated T cell population, comprising T cells prepared according to the method of claim 9.

11. A composition comprising a first component selected from the group consisting of physiologically acceptable carriers and immunostimulants, and a second component selected from the group consisting of:

(a) polypeptides according to claim 2;

(b) polynucleotides according to claim 1;

(c) antibodies according to claim 5;

(d) fusion proteins according to claim 7;

(e) T cell populations according to claim 10; and

(f) antigen presenting cells that express a polypeptide according to claim 2.

12. A method for stimulating an immune response in a patient, comprising administering to the patient a composition of claim 11.

13. A method for the treatment of a cancer in a patient, comprising administering to the patient a composition of claim 11.

14. A method for determining the presence of a cancer in a patient, comprising the steps of:

(a) obtaining a biological sample from the patient;

(b) contacting the biological sample with an oligonucleotide according to claim 8;

(c) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; and

(d) compare the amount of polynucleotide that hybridizes to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence of the cancer in the patient.

15. A diagnostic kit comprising at least one oligonucleotide according to claim 8.

16. A diagnostic kit comprising at least one antibody according to claim 5 and a detection reagent, wherein the detection reagent comprises a reporter group.

17. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating CD4+ and/or CD8+ T cells isolated from a patient with at least one component selected from the group consisting of: (i) polypeptides according to claim 2; (ii) polynucleotides according to claim 1; and (iii) antigen presenting cells that express a polypeptide of claim 2, such that T cell proliferate;

(b) administering to the patient an effective amount of the proliferated T cells,

and thereby inhibiting the development of a cancer in the patient.